

描述 / Descriptions

PDFN5×6-Clip 封装 P 沟道场效应管。

P-Channel MOSFET in a PDFN5×6-Clip Plastic Package.

特征 / Features

$V_{DS}(V)=-40V$ $I_D=-150A$

$R_{DS(ON)}@-10V<3m\Omega$ (TYP. $2.5m\Omega$)

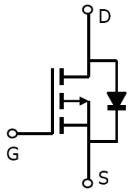
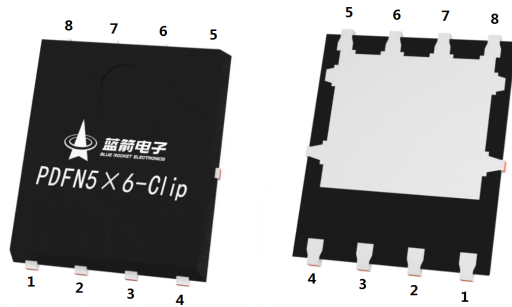
$R_{DS(ON)}@-4.5V<4.5m\Omega$ (TYP. $3.6m\Omega$)

无卤产品。HF Product.

用途 / Applications

电机驱动器，DC - DC 转换器。

Motor drivers, DC - DC Converter.

内部等效电路 / Equivalent Circuit**引脚排列 / Pinning**

PIN1、2、3: S PIN4: G PIN5、6、7、8: D

印章代码 / Marking

见印章说明。

See Marking Instructions.

极限参数 / Absolute Maximum Ratings($T_a=25^{\circ}\text{C}$)

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage	V_{DS}	-40	V
Drain Current – Continuous ^①	$I_D(T_c=25^{\circ}\text{C})$	-150	A
	$I_D(T_c=100^{\circ}\text{C})$	-94	A
Drain Current – Pulsed ^{①②}	I_{DM}	-360	A
Gate-Source Voltage	V_{GS}	± 20	V
Power Dissipation ^①	$P_D(T_c=25^{\circ}\text{C})$	110	W
Single Pulse Avalanche Energy($L=1\text{mH}$)	E_{AS}	760	mJ
Junction and Storage Temperature Range	T_j, T_{stg}	-55 to 150	$^{\circ}\text{C}$
Thermal resistance, junction - ambient ^①	$R_{\theta JA}$	55	$^{\circ}\text{C/W}$
Thermal resistance, junction - case ^①	$R_{\theta JC}$	1.14	

Notes:

* Surface Mounted on 1 in² pad area, $t \leq 10$ sec** Pulse width $\leq 300 \mu\text{s}$, duty cycle $\leq 2\%$
电性能参数 / Electrical Characteristics($T_a=25^{\circ}\text{C}$)

参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=-250\mu\text{A}$ $V_{GS}=0\text{V}$	-40			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-32\text{V}$ $V_{GS}=0\text{V}$			-1	μA
Gate-Body leakage current	I_{GSS}	$V_{DS}=0\text{V}$, $V_{GS}=\pm 20\text{V}$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$, $I_D=-250\mu\text{A}$	-1		-2	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=-10\text{V}$, $I_D=-30\text{A}$		2.5	3.0	m Ω
		$V_{GS}=-4.5\text{V}$, $I_D=-20\text{A}$		3.6	4.5	
Diode Forward Voltage	V_{SD}	$I_S=-30\text{A}$, $V_{GS}=0\text{V}$			-1.3	V
Reverse Recovery Time	t_{rr}	$I_{DS}=-30\text{A}$, $V_{GS}=0\text{V}$ $dI_{SD}/dt=100 \text{ A}/\mu\text{s}$		31		nS
Reverse Recovery Charge	Q_{rr}			20		nC
Input Capacitance	C_{iss}	$V_{DS}=-20\text{V}$ $V_{GS}=0\text{V}$ $f=1.0\text{MHz}$		15094		pF
Output Capacitance	C_{oss}			1018		
Reverse Transfer Capacitance	C_{rss}			224		

电性能参数 / Electrical Characteristics(Ta=25°C)

参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Total Gate Charge	Q_g	$V_{GS}=-10V, \quad V_{DS}=-20V,$ $I_D=-20A$		249		nC
Gate Source Charge	Q_{gs}			53		
Gate Drain Charge	Q_{gd}			26		
Turn-On Delay Time	$t_{d(on)}$	$V_{GEN}=-10V \quad V_{DS}=-20V$ $R_L=0.66\Omega \quad R_G=3.9\Omega$ $I_{DS}=-20A$		15		ns
Turn-On Rise Time	t_r			75		
Turn-Off Delay Time	$t_{d(off)}$			324		
Turn-Off Fall Time	t_f			98		

电参数曲线图 / Electrical Characteristic Curve

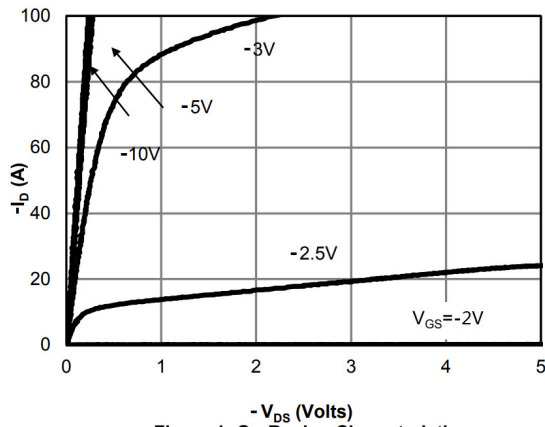


Figure 1: On-Region Characteristics

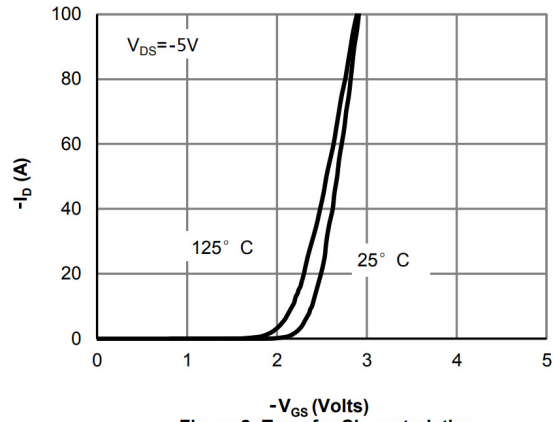


Figure 2: Transfer Characteristics

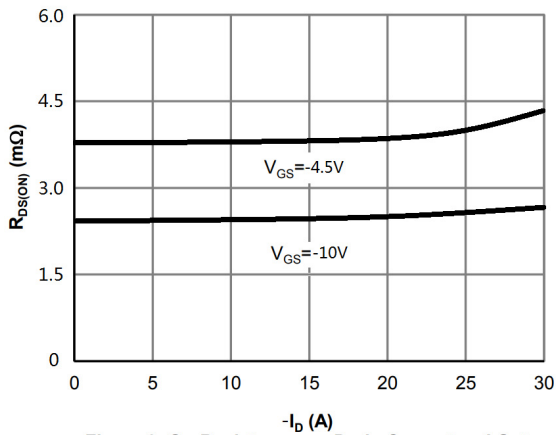


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

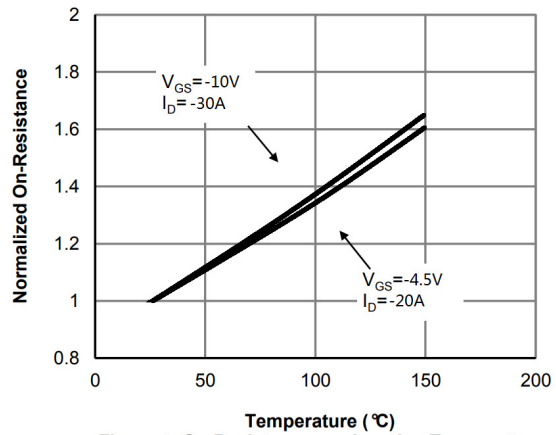


Figure 4: On-Resistance vs. Junction Temperature

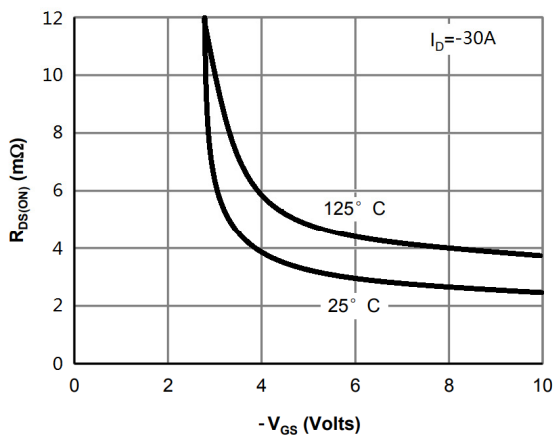


Figure 5: On-Resistance vs. Gate-Source Voltage

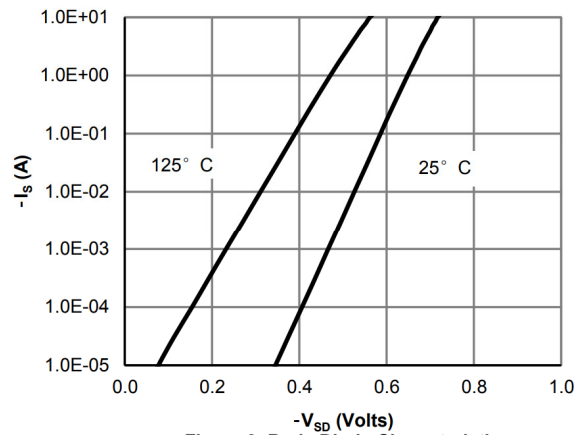
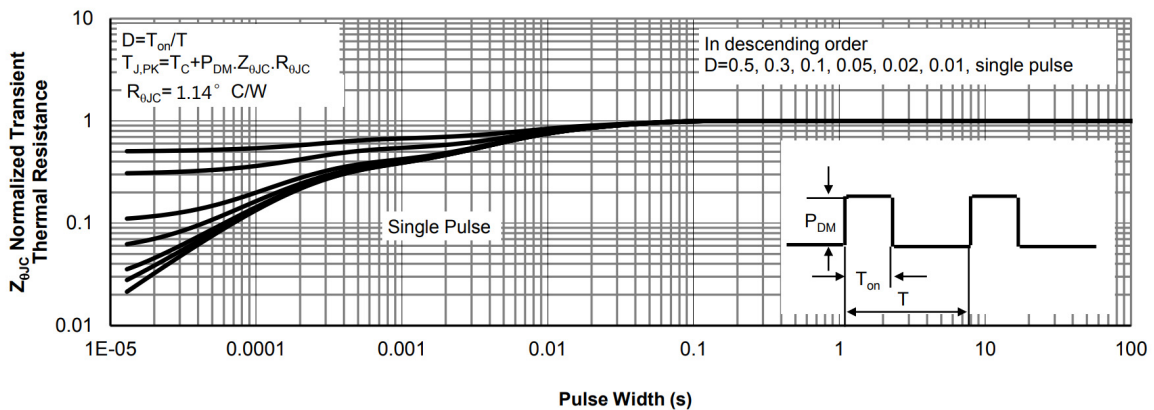
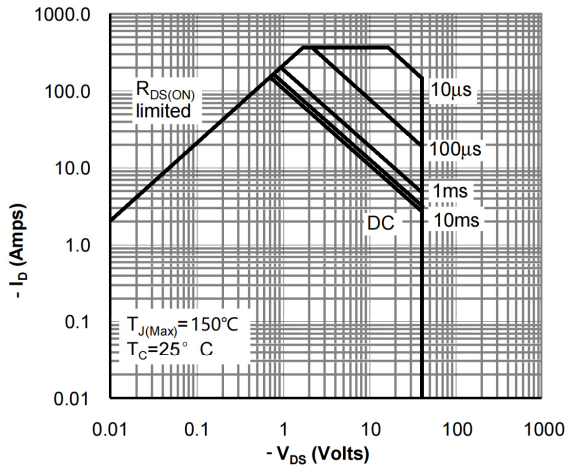
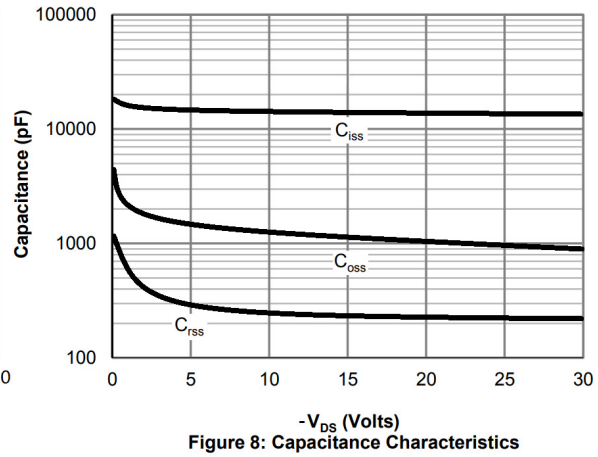
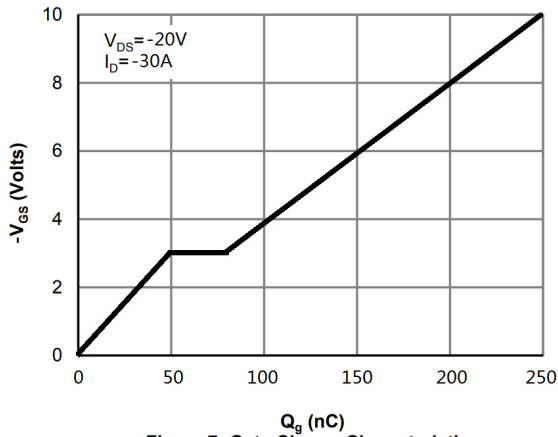
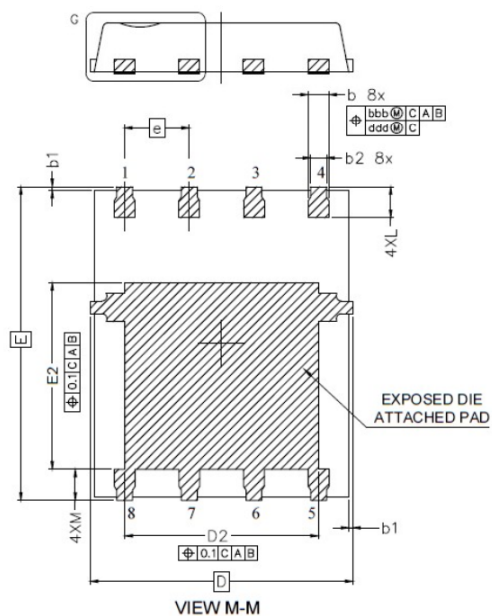
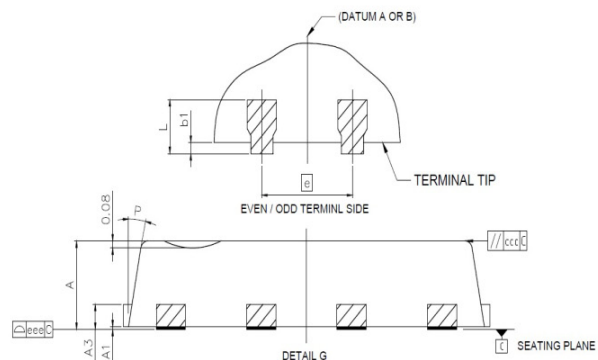
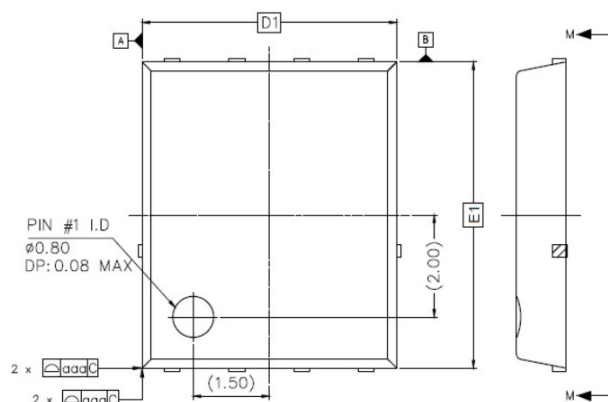


Figure 6: Body-Diode Characteristics

电参数曲线图 / Electrical Characteristic Curve

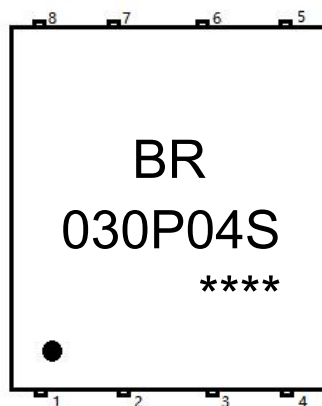


外形尺寸图 / Package Dimensions



Symbol	Dimensions In Millimeters	
	MIN.	MAX.
A	0.95	1.05
A1	0.00	0.05
A3	0.254REF	
b	0.31	0.51
b1	0.03	0.13
b2	0.21	0.41
D	5.15BSC	
D1	5.00BSC	
D2	3.70	3.90
E	6.15BSC	
E1	6.00BSC	
E2	3.56	3.76
e	1.27BSC	
L	0.51	0.71
M	0.51	0.71
P	10°	12°
aaa	0.10	
bbb	0.10	
ccc	0.10	
ddd	0.05	
eee	0.08	

印章说明 / Marking Instructions



说明：

BR： 为公司代码

030P04S： 为型号代码

****： 为生产批号代码，随生产批号变化

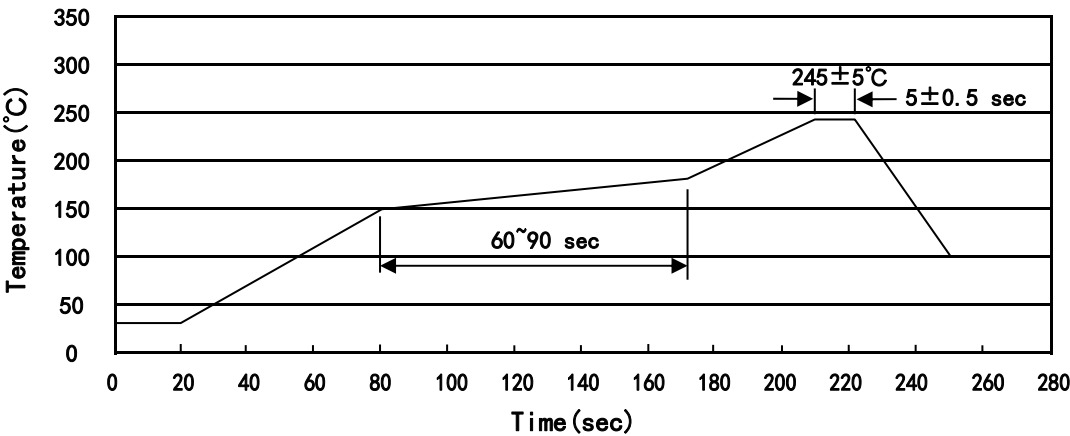
Note：

BR： Company Code

030P04S： Product Type Code

****： Lot No. Code, code change with Lot No.

回流焊温度曲线图(无铅) / Temperature Profile for IR Reflow Soldering(Pb-Free)



说明：

- 1、预热温度 150 ~ 180°C，时间 60 ~ 90sec;
- 2、峰值温度 245±5°C，时间持续为 5±0.5sec;
- 3、焊接制程冷却速度为 2 ~ 10°C/sec.

Note:

- 1.Preheating:150~180°C, Time:60~90sec.
- 2.Peak Temp.:245±5°C, Duration:5±0.5sec.
3. Cooling Speed: 2~10°C/sec.

耐焊接热试验条件 / Resistance to Soldering Heat Test Conditions

温度：260±5°C 时间：10±1 sec. Temp.:260±5°C Time:10±1 sec

包装规格 / Packaging SPEC.

卷盘包装 / REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
PDFN5×6-Clip	5,000	2	10,000	6	60,000	13"×12	360×360×50	380×335×366

使用说明 / Notices

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